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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/528,083	03/17/2000	Dave Genovese	MATP-592US	4196

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EXAMINER	
SLOAN, NATHAN A	
ART UNIT	**PAPER NUMBER**
2614	

DATE MAILED: 01/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

FN

FN

Office Action Summary	Application No.	Applicant(s)
	09/528,083	GENOVESE ET AL.
	Examiner	Art Unit
	Nathan A Sloan	2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 17 March 2000.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-10 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-10 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☒ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Oath/Declaration

1. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

It does not identify the mailing or post office address of each inventor. A mailing or post office address is an address at which an inventor customarily receives his or her mail and may be either a home or business address. The mailing or post office address should include the ZIP Code designation. The mailing or post office address may be provided in an application data sheet or a supplemental oath or declaration. See 37 CFR 1.63(c) and 37 CFR 1.76.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 6, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reitmeier (6,118,498) and in view of Limberg (6,445,425).

Reitmeier teaches a channel scanning method used to reduce latency in the time required to present a selected channel to a user for viewing. Two tuners are used to simultaneously

identify a selected channel frequency for the viewer, and to maintain an updated channel map in order to allow fast program tuning.

With respect to claims 1 and 6, the claimed "apparatus for deriving a channel map for a digital television receiver" is taught by Reitmeier as seen in Figure 1. The claimed "processor including a channel map data structure" is met by the Controller 70 containing CPU 74, claimed processor, with memory 76 containing Scan List 150, claimed channel map. As taught in column 3, lines 38-43, the claimed tuner, controlled by the processor, to tune to a channel and provide a signal having amplitude is met by the tuner 10A, controlled by the Controller 70 containing CPU 74 through link labeled "TA." The signal having amplitude, as claimed, is received received from RF input 5. The claimed "amplitude detector coupled to the tuner to provide a measure of the amplitude of the tuned television signal" is not explicitly taught by Reitmeier. Reitmeier teaches in column 4, lines 27-31 that channel scanning or changing is used to provide rapid channel acquisition and in column 6, lines 37-40 that frequency drift correction parameters may need to be stored for correction. Examiner notes that it is well known in the industry to scan a frequency range, obtain amplitudes, and compare the determined amplitudes to threshold values as claimed in order to detect television signals. To these means, Limberg (6,445,425) teaches an amplitude detector 24 coupled to a threshold detector 25, which performs the functions of the claimed comparator, in Figure 1. As taught in column 10, lines 50-57, the threshold detector determines if the detected amplitude exceeds a prescribed threshold value in order to determine if a signal is a digital television signal. If the threshold value is exceeded, as claimed, a signal is sent and the ATF signal selector 23 performs Automatic Fine Tuning of the signal. If the threshold value is not exceeded, then the AFT will not perform fine tuning because

the signal is not detected, and therefore the threshold detector 25 will have a second value, as claimed, that indicates a lack of signal. It would have been obvious for one skilled in the art at the time of the invention to modify the frequency scanning methods taught by Reitmeier to include a comparator for comparing detected amplitudes to a predetermined threshold to determine the presence of signals as taught by Limberg in order to store an accurate list of programs available for selection in memory.

Furthermore Reitmeier, does not explicitly teach the claimed "response to the output signal of the comparator having the first value, to change a value in the channel map data structure to indicate a specified channel is received by the DTV receiver." Reitmeier does teach that the scan list 150 is updated to reflect new channel information, including tuner frequency and channel ID in column 10, lines 12-16. The updating is controlled by CPU 74 of Figure 1 but is not taught explicitly to be updated in response to the output of a comparator. Examiner notes that during initial setup of channel maps it is well known to build the list based on services offered to users, and further that channel maps are known to change as offered services vary. In order to maintain a current list, it is well known to update the channel map to reflect the changes in tuning information. This is often performed by sending an updated channel map from the head end to multiple end receiving units, or in the alternative by performing frequency scanning at the receiver end. Examiner therefore takes Official Notice that it is notoriously well known in the art to update channel maps based on the output of a comparator that determines if a channel is offered. It would have been obvious for one skilled in the art at the time of the invention to modify the methods for scanning channel frequencies taught by Reitmeier and Limberg by

updating the channel map to reflect channels offered in order to provide viewers with efficient tuning that provides fast display of programming.

With respect to claims 9 and 10, the claimed periodic repeating of frequency scanning and detection to build a channel map "for all possible channel frequencies that may be tuned by the DTV receiver" is not explicitly taught by Reitmeier. Examiner takes Official Notice that it is notoriously well known in the art that building a channel map involves periodic scanning all possible frequencies that may be tuned to. It would have been obvious for one skilled in the art at the time of the invention to modify the channel scanning techniques taught by Reitmeier by scanning for all possible frequencies in order to build a complete, accurate channel map in memory.

4. Claims 2-5 and 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reitmeier and Limberg, and further in view of Sakashita (4,939,789).

With respect to claim 2 and 7, the claimed demodulator to demodulate a tuned signal provided by a tuner is taught by Reitmeier with demodulator 15A coupled to tuner 10A. The claimed processor containing "a user interface through which a user may cause the tuner to tune to a channel frequency indicated as being received by the DTV receiver in the channel map" is taught by Reitmeier with the User Input of Figure 1, taught in column 2 lines 63-67 and column 3 lines 1-6 to provide controls signals to Controller 70, through means such as a remote control, claimed interface. The control signals are taught to include commands such as changing a channel, claimed tuning to a channel frequency. The claimed monitoring of the demodulator output signal to "determine if the baseband signal is present and for adjusting the threshold value if the baseband DTV signal is not present" is not explicitly taught by Reitmeier. Limberg

teaches an AFT signal selector 23 that is used to perform fine tuning of a selected signal based on a determined threshold value as noted above, but does not teach adjusting the threshold value if the baseband DTV signal is not present. It is the position of the examiner that the presence of noise resulting in a frequency drift away from a standard comprises the claimed non-baseband signal. Sakashita et al. (4,939,789) teach the claimed adjustment of a threshold value used to determine if a television signal is present in column 11, lines 40-58. Sakashita teaches that noise may be sampled and compared to a threshold value, which is adjusted based on the determined noise in order to improve the demodulation signal to noise ratio. This process is better understood with reference to Figure 21, showing an improving signal to noise ratio 69 over a threshold range from P1 to an adjusted, as claimed, P2. It would have been obvious for one skilled in the art to modify the methods taught by Reitmeier and Limberg by performing adjustment of the threshold value to reduce noise as taught by Sakashita in order to provide the best signal to the viewer.

With respect to claim 3, the claimed demodulator providing a measure of noise and monitoring the output signal and adjusting the threshold value based on measured noise is not taught by Reitmeier. Reitmeier does teach, however, frequency tuning and correction of signal errors by using correction parameters in column 6, lines 34-42. These tuning methods are invoked as variable information and accounted for when a channel is selected, and therefore demodulated. As seen in Figure 1, the Aux Demux and Process unit 30 is coupled to the controller 70, and falls after the demodulator 15A to perform frequency adjustments as noted above. Examiner notes it was well known at the time of the invention that automatic fine tuning involves frequency scanning in small increments, that may be variable, to search for a valid

television signal and eliminate noise to provide the best possible signal to noise ratio. To these means, Sakashita et al. (4,939,789) teach the claimed "means for obtaining a measure of estimated noise" and "means for adjusting the threshold value based on the measure of estimated noise" in column 11, lines 40-58. Sakashita teaches that noise may be sampled and compared to a threshold value, which is adjusted based on the determined noise in order to improve the demodulation signal to noise ratio. This process is better understood with reference to Figure 21, showing an improving signal to noise ratio 69 over a threshold range from P1 to an adjusted, as claimed, P2. It would have been obvious for one skilled in the art to modify the methods taught by Reitmeier and Limberg by performing adjustment of the threshold value to reduce noise as taught by Sakashita in order to provide the best signal to the viewer.

With respect to claim 4, the claimed apparatus "apparatus for deriving a channel map for a digital television receiver" is taught by Reitmeier as seen in Figure 1. The claimed "processor including a channel map data structure" is met by the Controller 70 containing CPU 74, claimed processor, with memory 76 containing Scan List 150, claimed channel map. As noted above, the claimed processor contains a user interface through which a user may select a channel from among a plurality of channels, claimed selection of a frequency from among the channel frequencies, contained within the scan list 150, claimed channel map. The claimed first tuner is met by the tuner 10A which is taught in column 3, lines 38-43, controlled by the processor, to tune to a channel and provide a signal. The claimed "second tuner controlled by the processor in response to a desired frequency entered by the viewer through the user interface to provide a second tuned television signal" met by tuner 10B being controlled by Controller 70; this is explained in column 3, lines 49-55. Reitmeier also teaches a demodulator coupled to the second

tuner in the demodulator 15B of Figure 1, as claimed. The signal having amplitude is received from RF input 5. The claimed "amplitude detector coupled to the first tuner to provide a measure of the amplitude of the tuned television signal" is not explicitly taught by Reitmeier. Reitmeier teaches in column 4, lines 27-31 that channel scanning or changing is used to provide rapid channel acquisition and in column 6, lines 37-40 that frequency drift correction parameters may need to be stored for correction. Examiner notes that it was well known in the industry at the time of the invention to scan a frequency range, obtain amplitudes, and compare the determined amplitudes to threshold values as claimed in order to detect television signals. To these means, Limberg (6,445,425) teaches an amplitude detector 24 coupled to a threshold detector 25, which performs the functions of the claimed comparator, in Figure 1. As taught in column 10, lines 50-57, the threshold detector determines if the detected amplitude exceeds a prescribed threshold value in order to determine if a signal is a digital television signal. If the threshold value is exceeded, as claimed, a signal is sent and the ATF signal selector 23 performs Automatic Fine Tuning of the signal. If the threshold value is not exceeded, then the AFT will not perform fine tuning because the signal is not detected, and therefore the threshold detector 25 will have a second value, as claimed, that indicates a lack of signal. It would have been obvious for one skilled in the art at the time of the invention to modify the frequency scanning methods taught by Reitmeier to include a comparator for comparing detected amplitudes to a predetermined threshold to determine the presence of signals as taught by Limberg in order to store an accurate list of programs available for selection in memory.

Furthermore Reitmeier, does not explicitly teach the claimed changing a value in the channel map based on a the lack of a signal being received by the receiver and increasing the

threshold value if the selected baseband signal is not provided. Reitmeier does teach that the scan list 150 is updated to reflect new channel information, including tuner frequency and channel ID in column 10, lines 12-16. The updating is controlled by CPU 74 of Figure 1 but is not taught explicitly to be updated in response to the output of a comparator based on threshold values. Examiner notes that during initial setup of channel maps it is well known to build the list based on services offered to users, and further that channel maps are known to change as offered services vary. In order to maintain a current list, it is well known to update the channel map to reflect the changes in tuning information. This is often performed by sending an updated channel map from the head end to multiple end receiving units, or in the alternative by performing frequency scanning at the receiver end. Examiner therefore takes Official Notice that it is notoriously well known in the art to update channel maps based on the output of a comparator that determines if a channel is offered. It would have been obvious for one skilled in the art at the time of the invention to modify the methods for scanning channel frequencies taught by Reitmeier and Limberg by updating the channel map to reflect channels offered in order to provide viewers proper access to broadcast services.

Furthermore, as noted above Sakashita et al. (4,939,789) teach increasing the threshold value as claimed in order to detect and provide the best signal possible in column 11, lines 40-58. This process is better understood with reference to Figure 21, showing an improving signal to noise ratio 69 over a threshold range from P1 to an adjusted, as claimed, P2. It would have been obvious for one skilled in the art to modify the methods taught by Reitmeier and Limberg by performing adjustment of the threshold value to reduce noise as taught by Sakashita in order to provide the best signal to the viewer.

With respect to claim 5, the second tuner providing a measure of estimated noise received in the signal, and adjusting the threshold value based on the measure of estimated noise as claimed is not explicitly taught by Reitmeier. Reitmeier does teach, however, frequency tuning and correction of signal errors by using correction parameters in column 6, lines 34-42. These tuning methods are invoked as variable information and accounted for when a channel is selected, and therefore demodulated. As seen in Figure 1, the second tuner 10B is coupled to the Aux Demux and Process unit 30 and controller 70, which performs frequency adjustments as noted above. Examiner notes it was well known at the time of the invention that automatic fine tuning involves frequency scanning in small increments, that may be variable, to search for a valid television signal and eliminate noise to provide the best possible signal to noise ratio. Sakashita et al. (4,939,789) teach the claimed "means for obtaining a measure of estimated noise" and "means for adjusting the threshold value based on the measure of estimated noise" in column 11, lines 40-58. Sakashita teaches that noise may be sampled and compared to a threshold value, which is adjusted based on the determined noise in order to improve the demodulation signal to noise ratio. This process is better understood with reference to Figure 21, showing an improving signal to noise ratio 69 over a threshold range from P1 to an adjusted, as claimed, P2. It would have been obvious for one skilled in the art to modify the methods taught by Reitmeier and Limberg by performing adjustment of the threshold value to reduce noise as taught by Sakashita in order to provide the best signal to the viewer.

With respect to claim 8, the claimed measuring of noise and adjusting the threshold value based on measured noise is not explicitly taught by Reitmeier. Reitmeier does teach, however, frequency tuning and correction of signal errors by using correction parameters in column 6,

lines 34-42. These tuning methods are invoked as variable information and accounted for when a channel is selected. As seen in Figure 1, the Aux Demux and Process unit 30 is coupled to the controller 70, and falls after the demodulator 15A to perform frequency adjustments as noted above. Examiner notes it was well known at the time of the invention that automatic fine tuning involves frequency scanning in small increments, that may be variable, to search for a valid television signal and eliminate noise to provide the best possible signal to noise ratio. Sakashita et al. (4,939,789) teach the claimed obtaining a measure of estimated noise and adjusting the threshold value based on the measure of estimated noise in column 11, lines 40-58. It is the position of the examiner that the presence of noise resulting in a frequency drift away from a standard comprises the claimed non-baseband signal. Sakashita teaches that noise may be sampled and compared to a threshold value, which is adjusted based on the determined noise in order to improve the demodulation signal to noise ratio. This process is better understood with reference to Figure 21, showing an improving signal to noise ratio 69 over a threshold range from P1 to an adjusted, as claimed, P2. It would have been obvious for one skilled in the art to modify the methods taught by Reitmeier and Limberg by performing adjustment of the threshold value to reduce noise as taught by Sakashita in order to provide the best signal to the viewer.

Furthermore, Reitmeier does not explicitly teach the claimed changing a value in the channel map to indicate that "a channel in the channel map does not correspond to a DTV channel." Reitmeier does teach that the scan list 150 is updated to reflect new channel information, including tuner frequency and channel ID in column 10, lines 12-16. The updating is controlled by CPU 74 of Figure 1 but is not taught explicitly to be performed as part of a "step of changing the threshold value," as claimed. Examiner notes that during initial setup of channel

maps it is well known to build the list based on services offered to users, and further that channel maps are known to change as offered services vary. In order to maintain a current list, it is well known to update the channel map to reflect the changes in tuning information. This is often performed by sending an updated channel map from the head end to multiple end receiving units, or in the alternative by performing frequency scanning at the receiver end. As noted above with references Limberg and Sakashita, the frequency scanning and tuning aspect is known to involve the step of changing a threshold for varying levels of noise. It therefore would have been obvious for one skilled in the art at the time of the invention to modify the methods for storing data in the channel map taught by Reitmeier by updating the channel map to reflect that a signal is not a baseband DTV signal in order to list only those channels which are within the DTV range and may be presented to viewers.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sakakibara (5,441,080) teaches a television signal tuning device with memory ofr storing frequency data.

Gercekci et al. (4,367,558) teach a method for automatically searching for an RF station that detects carrier frequencies.

Haselwood et al. (4,425,578) teach a monitoring system for determining channel reception in a video system. A comparator is used along with frequency scanning techniques determines when channels are found.

Patel et al. (6,124,898) teach a digital television receiver that uses a threshold detector as claimed.

Ozkan et al. (6,115,074) teach a system for forming and processing a program or channel map in a digital cable broadcast system.

Tsinberg et al. (6,212,680) teach an electronic program guide aquisition method with digital television receivers.

Pauley et al. (6,188,448) teach a system and method for fast tuning an audiovisual display using dual tuners and dual channel maps.

Hancock et al. (6,442,757) teach a system and method of channel map correction.

Henderson (4,422,096) teaches a television frequency synthesizer for non-standard frequency carriers using AFT, comparator, and threshold detection circuitry to detect broadcast signals. The threshold control circuitry generates different outputs indicating if the signal exceeds a threshold.

Richards (4,897,727) teaches a television tuning system designed to provide rapid response using a stored channel list and frequency search.

Ko (6,486,925) teaches a channel managing apparatus that stores channel information in memory.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan A Sloan whose telephone number is (703)305-8143. The examiner can normally be reached on Monday-Friday from 8:00AM to 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller, can be reached on (703) 305-4795. The fax phone number for the organization where this application or proceeding is assigned is (703)308-5399.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-3900.

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